

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Suneel Ismail Sheikh, et al. : Group
Serial No: 10/728,869 : Art Unit # 3661
Filed: 8 December 2003 : Examiner:
Title: NAVIGATIONAL SYSTEM AND METHOD : Unknown
UTILIZING SOURCES OF PULSED
CELECTIAL RADIATION :



INFORMATION DISCLOSURE STATEMENT

Honorable Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

The Applicants wish to make the following art references of record in the above-identified Patent Application pursuant to 37 C.F.R. §§ 1.97 and 1.98, and to the Duty of Disclosure set forth in 37 C.F.R. § 1.56.

Although the information submitted herewith may be "material" to the Examiner's consideration of the subject Patent Application, this submission is not intended to constitute an admission that such information is "prior art" as to the claimed invention.

In accordance with 37 C.F.R. § 1.97(g), the filing of this Information Disclosure Statement shall not be construed to mean that a search was made or that no other material information, as defined in 37 C.F.R. § 1.56(b), exists.

Cited Publications are:

<u>Ref. No.</u>	<u>Description</u>
A1	W.G. Melbourne, "NAVIGATION BETWEEN THE PLANETS", Scientific American, Vol. 234, No. 6, June 1976, pp. 58-74
B1	J.F. Jordan, "NAVIGATION OF SPACECRAFT ON DEEP SPACE MISSIONS", Journal of Navigation, Vol. 40, January 1987, pp. 19-29
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- J1 John Eric Hanson, "PRINCIPLES OF X-RAY NAVIGATION", Doctoral Dissertation, Stanford University, March 1996.
- K1 K.S. Wood, et al., "THE USA EXPERIMENT ON THE ARGOS SATELLITE: A LOST COST INSTRUMENT FOR TIMING X-RAY BINARIES", EUV, X-Ray, and Gamma-Ray Instrumentation for Astronomy V, Eds. O.H. Siegmund & J.V. Vallerga, SPIE Proceedings, Vol. 2280, 1994, p. 19
- L1 K.S. Wood, et al., "THE USA EXPERIMENT ON THE ARGOS SATELLITE: A LOW COST INSTRUMENT FOR TIMING X-RAY BINARIES", The Evolution of X-ray Binaries, Eds. S.S. Holt and C.S. Day, American Institute of Physics Proceedings, No. 308, 1994, p. 561-564
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- R1 K.S. Wood, et al., "THE HEAO A-1 X-RAY SOURCE CATALOG", Astrophysical Journal Supplemental Series, Vol 56, December 1984, pp. 507-649

- S1 W. Voges, et al. "THE ROSAT ALL-SKY SURVEY BRIGHT SOURCE CATALOGUE (1RXS)", Astronomy and Astrophysics, Vol. 349, 1999, pp. 389-405
- T1 W. Voges, et al., "THE ROSAT ALL-SKY SURVEY FAINT SOURCE CATALOGUE", International Astronomical Union Circular 7432, May 2000
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- Z1 A.G. Lyne, et al., "JODRELL BANK CRAB PULSAR TIMING RESULTS, MONTHLY EPHEMERIS", University of Manchester, August 13, 2002 Unpublished.
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- B2 R.W. Hellings, "RELATIVISTIC EFFECTS IN ASTRONOMICAL TIMING MEASUREMENTS", Astronomical Journal, Vol. 91, No. 3, March 1986, pp. 650, 659

- C2 Theodore D. Moyer, "TRANSFORMATION FROM PROPER TIME ON EARTH TO COORDINATE TIME IN SOLAR SYSTEM BARYCENTRIC SPACE-TIME FRAME OF REFERENCE, PART 1", Celestial Mechanics, Vol. 23, 1981, pp. 33-56.
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- F2 D.C. Backer, et al., "PULSAR TIMING AND GENERAL RELATIVITY", Annual Review of Astronomy and Astrophysics, Vol. 24, 1986, pp. 537-575.
- G2 P. Stumpff, "ON THE COMPUTATION OF BARYCENTRIC RADIAL VELOCITIES WITH CLASSICAL PERTURBATION THEORIES", Astronomy and Astrophysics, Vol. 56, 1977, pp. 13-23.
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- I2 Duncan R. Lorimer, "BINARY AND MILLISECOND PULSARS AT THE NEW MILLENNIUM", Living Review in Relativity, Max Planck Institute for Gravitational Physics, Albert Einstein Institute, Germany, June 2001.
- J2 C.F. Martin, et al., "RELATIVISTIC EFFECTS ON AN EARTH-ORBITING SATELLITE IN THE BARYCENTER COORDINATE SYSTEM", Journal of Geophysical Research, Vol. 90, No. B11, September 1985, pp. 9403-9410
- K2 Clifford M. Will, et al., "CONSERVATION LAWS AND PREFERRED FRAMES IN RELATIVISTIC GRAVITY. I. PREFERRED-FRAME

THEORIES AND EXTENDED PPN FORMALISM", *Astrophysical Journal*, Vol. 177, Nov. 1972, pp. 757-774

- L2 K. Nordtvedt, Jr., et al., "SECOND-ORDER CONTRIBUTIONS TO RELATIVISTIC TIME DELAY IN THE PARAMETERIZED POST-NEWTONIAN FORMALISM", *Physical Review D*, Vol. 28, No. 12, Dec. 1983, pp. 3006-3012.
- M2 Gary W. Richter, et al., "SECOND-ORDER CONTRIBUTIONS TO RELATIVISTIC TIME DELAY IN THE PARAMETERIZED POST-NEWTONIAN FORMALISM", *Physical Review D*, Vol. 28, No. 12, Dec. 1983, pp. 3006-3012.
- N2 Neil Ashby, et al., "COORDINATE TIME ON AND NEAR THE EARTH", *Physical Review Letters*, Vol. 53, No. 19, No. 1984, p. 1858.
- O2 Irwin I. Shapiro, "FOURTH TEST OF GENERAL RELATIVITY", *Physical Review Letters*, Vol. 13, No. 26, Dec. 1964, pp. 789-791
- P2 L.A. Rawley, et al., "FUNDAMENTAL ASTROMETRY AND MILLISECOND PULSARS", *Astrophysical Journal*, Vol. 326, March 1988, pp. 947-953
- Q2 V.M. Kaspi, "HIGH-PRECISION TIMING OF MILLISECOND PULSARS AND PRECISION ASTROMETRY", *Proceedings of 166th Symposium of the International Astronomical Union*, Eds. E. Hog and P. Kenneth Seidelmann, Aug. 1994, pp. 163-174.
- R2 J.F. Bell, "RADIO PULSAR TIMING", *Advances in Space Research*, Vol. 21, No. 1/2, 1998, pp. 137-147
- S2 J.H. Taylor, et al., "FURTHER EXPERIMENTAL TESTS OF RELATIVISTIC GRAVITY USING THE BINARY PULSAR PSR 1913+16", *Astrophysical Journal*, Vol. 345, October 1989, pp. 434-450.
- T2 Roger Blandford, et al., "ARRIVAL-TIME ANALYSIS FOR A PULSAR IN A BINARY SYSTEM", *Astrophysical Journal*, Vol. 205, April 1976, pp. 580-591.

- U2 Sergei M. Kopeikin, "MILLISECOND AND BINARY PULSARS AS NATURE'S FREQUENCY STANDARDS-II. THE EFFECTS OF LOW-FREQUENCY TIMING NOISE ON RESIDUALS AND MEASURED PARAMETERS", Monthly Notices of the Royal Astronomical Society, Vol. 350, 1999, pp. 563-590.
- V2 P. Kenneth Seidelmann, Ed., Explanatory Supplement to the Astronomical Almanac, University Science Books, 1992, Portion of Chapter 2.

This Information Disclosure Statement is being filed more than three months subsequent to the Filing Date of the subject Patent Application, but before the mailing of a first Office Action.

A Form PTO-1449 and copies of the references are submitted along with this document. It is requested that the Examiner consider the references and make them of record in the above-referenced Patent Application.

Respectfully submitted,
FOR: ROSENBERG, KLEIN & LEE



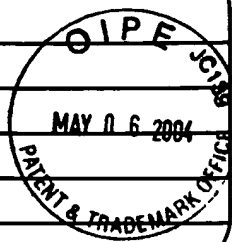
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Dated: *5 May 2004*

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Substitute for form 1449/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use as many sheets as necessary)		Complete if Known	
		Application Number	10/728,869
		Filing Date	12/08/2003
		First Named Inventor	Suneel Ismail Sheikh
		Art Unit	3661
		Examiner Name	
Sheet 1	of 5	Attorney Docket Number	MR2833-29



NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
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Examiner Signature		Date Considered	
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 120 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, Washington, DC 20231.

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		Filing Date	12/08/2003
		First Named Inventor	Suneel Ismail Sheikh
		Art Unit	3661
		Examiner Name	
Sheet 2	of 5	Attorney Docket Number	MR2833-29

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		First Named Inventor	Suneel Ismail Sheikh
		Art Unit	3661
		Examiner Name	
Sheet 3	of 5	Attorney Docket Number	MR2833-29

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		Application Number	10/728,869
		Filing Date	12/08/2003
		First Named Inventor	Suneel Ismail Sheikh
		Art Unit	3661
		Examiner Name	
Sheet 5	of 5	Attorney Docket Number	MR2833-29

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	O2	Irwin I. Shapiro, "FOURTH TEST OF GENERAL RELATIVITY", Physical Review Letters, Vol. 13, No. 26, Dec. 1964, pp. 789-791	
	P2	L. A. Rawley et al., "FUNDAMENTAL ASTROMETRY AND MILLISECOND PULSARS", Astrophysical Journal, Vol. 326, March 1988, pp. 947-953	
	Q2	V.M. Kaspi, "HIGH-PRECISION TIMING OF MILLISECOND PULSARS AND PRECISION ASTROMETRY", Proceedings of 166th Symposium of the International Astronomical Union, Eds. E. Hog and P. Kenneth Seidelmann, Aug. 1994, pp. 163-174.	
	R2	J.F. Bell, "RADIO PULSAR TIMING", Advances in Space Research, Vol. 21, No. 1/2, 1998, pp. 137-147	
	S2	J.H. Taylor et al., "FURTHER EXPERIMENTAL TESTS OF RELATIVISTIC GRAVITY USING THE BINARY PULSAR PSR 1913+16", Astrophysical Journal, Vol. 345, October 1989, pp. 434-450.	
	T2	Roger Blandford, et al., "ARRIVAL-TIME ANALYSIS FOR A PULSAR IN A BINARY SYSTEM", Astrophysical Journal, Vol. 205, April 1976, pp. 580-591.	
	U2	Sergei M. Kopeikin, "MILLISECOND AND BINARY PULSARS AS NATURE'S FREQUENCY STANDARDS-II. THE EFFECTS OF LOW-FREQUENCY TIMING NOISE ON RESIDUALS AND MEASURED PARAMETERS", Monthly Notices of the Royal Astronomical Society, Vol. 350, 1999, pp. 563-590.	
	V2	P. Kenneth Seidelmann, Ed., Explanatory Supplement to the Astronomical Almanac, University Science Books, 1992, Portion of Chapter 2.	

Examiner Signature		Date Considered	
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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